

CLAIMS:

1. A combustible pesticidal product comprising a structural element formed of a vacuum moulded pulp of organic fibrous material, cellulose fibres, wood free fibres, or mixtures thereof, the product including one or more pesticides,
5 which product on combustion emanates the pesticide into the atmosphere.
2. A combustible pesticidal product as in claim 1 wherein the product is formed of a thermoformed pulp.
3. A combustible pesticidal product as in claim 2 wherein the product is
10 thermoformed at a temperature of between 80 to 400°C, and at a pressure of between 50 to 1500kPa.
4. A combustible pesticidal product of claim 3 wherein the product is thermoformed at a temperature of 250°C.
5. A combustible pesticidal product of claim 3 wherein the product is
15 thermoformed at a pressure of between 200 to 600kPa.
6. A combustible pesticidal product of claim 4 wherein the product is thermoformed at a pressure of 400kPa.
7. A combustible pesticidal product as in any one of the preceding claims wherein the product comprises either incorporating into the wet pulp during its preparation
20 and/or applying to a pulp as a coating thereof at least one of the following:
an alkali earth metal nitrate or nitrite in an amount of from 0.04 to 1.83% w/w, an alkali earth carbonate or bicarbonate in an amount of from 0.02 to 1.83% w/w;
sodium silicate in an amount of from 0.01 to 1.37% w/w;
a phosphate in an amount of from 0.01 to 0.40% w/w and selected from the group
25 consisting of diammonium phosphate, monoammonium phosphate, triammonium phosphate and mixtures thereof;
a boron compound in an amount of from 0.01 to 0.92% w/w and selected from the group consisting of boric acid, sodium tetraborate hydrous, sodium borate, potassium borate, calcium borate, zinc perborate, boronatrocalcite and mixtures thereof; and
30 optionally
a perfume and/or dye.

8. A method for making a moulded combustible pesticidal product as claimed in claim 1 in which the one or more pesticides are insecticides, preferably esbiothrin, d-allethrin, prallethrin, transfluthrin, bioallethrin, esbioallethrin, pyrethrins, citronella, pyrethroids, neem oil and mixtures thereof.
- 5 9. A combustible pesticidal product as claimed in claim 8 wherein the one or more pesticides are selected from the group consisting of esbiothrin, d-allethrin, prallethrin, transfluthrin, bioallethrin, esbioallethrin, pyrethrins, citronella, pyrethroids, neem oil and mixtures thereof and are in an amount of from 0.01 to 0.6% w/w.
- 10 10. A combustible pesticidal product of claim 9 wherein the pesticides are present in an amount of from 0.02 to 0.3% w/w.
11. A combustible pesticidal product of claim 10 wherein the pesticides are present in an amount of from 0.04 to 0.1% w/w.
12. A combustible pesticidal product as claimed in claim 9 wherein the one or more insecticides are selected from the group consisting of pyrethroids, neem oil, citronella
15 and mixtures thereof and are in an amount of from 0.01 to 10% w/w.
13. A combustible pesticidal product of claim 12 wherein the insecticides are present in an amount of from 0.01 to 6% w/w.
14. A combustible pesticidal product of claim 13 wherein the insecticides are present in an amount of from 0.04 to 6% w/w.
- 20 15. A combustible pesticidal product as in any one of claims 7 to 14 wherein the alkali earth metal nitrate or nitrite is included in an amount of from 0.20 to 1.20% w/w.
16. A combustible pesticidal product of claim 15 wherein the alkali earth metal nitrate or nitrite is included in an amount of 1.11% w/w.
17. A combustible pesticidal product as in any one of claims 7 to 15 wherein the
25 nitrates and nitrites are selected from the group consisting of sodium nitrite, sodium nitrate, potassium nitrite, potassium nitrate, calcium nitrite, calcium nitrate, magnesium nitrite, magnesium nitrate and mixtures thereof.
18. A combustible pesticidal product as in any one of claims 7 to 17 wherein the alkali earth metal carbonate or bicarbonate is in an amount of from 0.01 to 1.00% w/w.
- 30 19. A combustible pesticidal product of claim 18 wherein the alkali earth metal carbonate or bicarbonate is present in an amount of about 0.82% w/w.

20. A combustible pesticidal product as in claim 18 wherein the carbonates or bicarbonates are selected from the group consisting of sodium carbonate, sodium bicarbonate, potassium carbonate, potassium bicarbonate, calcium carbonate, calcium bicarbonate, magnesium bicarbonate, magnesium carbonate and mixtures thereof.
- 5 21. A combustible pesticidal product as in any one of claims 7 to 20 wherein the sodium silicate is included in an amount of from 0.01 to 0.70% w/w.
22. A combustible pesticidal product of claim 21 wherein the sodium silicate is included in an amount of about 0.56% w/w.
23. A combustible pesticidal product as in any one of claims 7 to 22 wherein the
10 phosphate is included in an amount of from 0.02 to 0.40% w/w.
24. A combustible pesticidal product of claim 23 wherein the phosphate is included in an amount of 0.14% w/w.
25. A combustible pesticidal product as in claim 23 wherein the phosphate is diammonium phosphate.
- 15 26. A combustible pesticidal product as in any one of claims 7 to 25 wherein the boron compound is included in an amount of from 0.10 to 0.70% w/w.
27. A combustible pesticidal product as in claim 26 wherein the boron compound is included in an amount of 0.66% w/w.
28. A combustible pesticidal product as in any one of the preceding claims wherein
20 the thickness of the pulp product is from 1mm to 6mm.
29. A combustible pesticidal product as in claim 28 wherein the thickness of the pulp product is 4mm.
30. A combustible pesticidal product as in any one of the preceding claims wherein the width of the pulp product is from 3mm to 10mm.
- 25 31. A combustible pesticidal product as in claim 30 wherein the width of the pulp product is 6mm.
32. A combustible pesticidal product as in any one of the preceding claims wherein the length of the pulp product is from 500 to 1500mm.
33. A combustible pesticidal product as in claim 32 wherein the length of the pulp
30 product is 1100mm.

34. A combustible pesticidal product as in any one of the preceding claims wherein the density of the pulp product is from 300 to 1000kg/m³.
35. A combustible pesticidal product as in claim 34 wherein the density of the pulp product is from 400 to 600kg/m³.
- 5 36. A combustible pesticidal product as in claim 35 wherein the density of the pulp product is 600kg/m³.
37. A combustible pesticidal product as in any one of the preceding claims wherein the product has a cross-sectional combustion area shaped in a rectangle, triangle, square, half-circle, u section or combinations thereof.
- 10 38. A combustible pesticidal product as in any one of the preceding claims wherein the organic fibrous materials, cellulose fibres and wood free fibres include but are not limited to waste paper and cardboard, old newspaper, kraft pulp, coconut powder, straw, bagasse, bamboo, cane, straw, grasses, weeds, tea leaves, charcoal powder, sawdust, cotton, cloth and rags, and husks of materials including rice, wheat and
- 15 coconuts.
39. A combustible pesticidal product as claim 7 wherein the coating is applied to the pulp by rolling, painting, printing or spraying.
40. A combustible pesticidal product as in any one of the preceding claims wherein other components can be added to the pulp or applied as a coating.
- 20 41. A combustible pesticidal product as in claim 40 wherein the components can include binders, dewatering agents, chemicals to increase the wet and dry strength of the product, starches, gums, talc and glues.
42. A combustible pesticidal product as in any one of the preceding claims wherein the product is a mosquito coil having a burn time of at least 4 hours.
- 25 43. A combustible pesticidal product as in claim 42 wherein the mosquito coil has a burn time of 7-8 hours.
44. A combustible pesticidal product as in claim 42 wherein the coil is shaped as a single helical coil, double coil, triangular, hexagon, polygon, rectangular or other configurations.
- 30 45. A combustible pesticidal product as in claim 44 wherein the coil is a single helical coil and the weight of the single coil is 8 to 20 grams.

46. A combustible pesticidal product as in claim 45 wherein the weight of the single coil is 12 grams.
47. A method of making a combustible pesticidal product comprising the steps of:
forming a pulp of organic fibrous material, cellulose fibres, wood free fibres, or
5 mixtures thereof,
the addition of one or more pesticides, and
moulding the product by vacuum moulding
to form a combustible pesticidal product.
48. A method of making a combustible pesticidal product as in claim 47 wherein the
10 product is formed at a vacuum pressure of 0-20kPa.
49. A method of making a moulded combustible pesticidal product substantially as
hereinbefore described with reference to the Examples 1 and 2.
50. A method of making a moulded combustible pesticidal product substantially as
hereinbefore described with reference to the accompanying Figures 3a, 3b and 4.
- 15 51. A combustible pesticidal product when made according to the method of
claim 47.